



<b>Position Title</b>	PhD Studentship - Electrocatalytic CO <sub>2</sub> Reduction at Single Au and Cu Nanoparticles
<b>Project Abstract</b>	<p>The burning of fossil fuels has resulted in the drastic increase in atmospheric CO<sub>2</sub> concentrations and climate change. The capture and conversion of CO<sub>2</sub> into economically useful products could reduce atmospheric CO<sub>2</sub> levels at the same time as producing liquid fuels. One method for the capture and conversion of CO<sub>2</sub> is electrochemical reduction. This requires electrical energy, which can be derived from renewable sources, and a highly efficient electrocatalyst. Both Au and Cu are potential electrocatalysts.</p> <p>We aim to investigate the relationship between nanoparticle morphology and electrocatalytic CO<sub>2</sub> reduction activity on single isolated Au and Cu nanoparticles using a combination of Scanning Electrochemical Cell Microscopy and Atomic Force Microscopy.</p> <p>The ability to measure both electrocatalytic activity and precise morphology of each individual nanoparticle is unique and will provide an internationally distinct research effort that will produce the first morphology/activity relationship at a single nanoparticle level.</p>
<b>Experience</b>	The PhD position is funded for 4 years, including a monthly stipend and materials and travel budget. Applicants should hold a minimum of an honours bachelor's degree at 2:1 level or equivalent in a relevant subject such as Chemistry/Materials. Candidates should also have a strong interest in Catalysis/Energy.
<b>Funding</b>	The studentship will cover fees up to €5,500 pa and a stipend of €18,500 pa
<b>Location</b>	TCD
<b>Closing Date</b>	Friday 29 <sup>th</sup> June 2018
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